



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,071

06/15/2006

Takayuki Takeuchi

10873.1909USWO

9144

53148

7590

08/02/2011

HAMRE, SCHUMANN, MUELLER & LARSON P.C.

P.O. BOX 2902

MINNEAPOLIS, MN 55402-0902

EXAMINER

BREVAL, ELMITO

ART UNIT

PAPER NUMBER

2889

MAIL DATE

DELIVERY MODE

08/02/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,071	Applicant(s) TAKEUCHI ET AL.	
	Examiner ELMITO BREVAL	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment 06/13/2011 has been entered.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/13/2011 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao et al., (US. Pat: 6,150,668) in view of Morita et al., (JP: 2003: 084686) of record in further view of Carcia et al., (US. Pub: 2003/0164497) of record.

Regarding claim 1, Bao ('668) teaches (in at least figs. 2 and 3) a display apparatus in which a pixel is driven by using a thin film transistor (201) including an organic material in at least an active layer (230) wherein the thin film transistor unit (201) and a display element unit (202) are laminated on a substrate (205) in this order, the thin film transistor unit (201) and the display element unit (202) are separated from each other, a pixel electrode (216) formed on a substrate side of the display element unit (202) functions as the pixel electrode of the display unit (202) and a drain electrode (226) of the thin film transistor unit (201), a source electrode (225) of the thin film transistor unit (201) is formed so as to opposed to the pixel electrode (216) in a thickness direction (best seen in the fig.) with the active layer (230) interposed there between, the pixel electrode (216) has an area larger than that of the source electrode (225) and covers the active layer (230).

Bao ('668) does not disclose the pixel electrode covers the active layer corresponding to the source electrode substantially entirely, the pixel electrode being overlapped in a thickness direction with the source electrode, and a conductive film for suppressing permeation of gas and moisture is formed outside of the display element unit, the conductive film covering the display element unit, wherein the source electrode has an area not less than 25% the size of the pixel electrode.

Morita ('686) in the same field of endeavor teaches (in at least fig. 1) an organic EL display device (see the title) comprised of, in part, a drain electrode (60) and a source electrode (20) wherein the drain electrode has an area greater than the source electrode area ([0016]-[0017]; [0026]). Morita discloses (in at least fig. 1) the drain electrode (60) being overlapped in a thickness direction with the source electrode (20; see the fig). Morita further discloses that the width of the drain electrode is made between 1.2 to 2.5 times the width of the source electrode ([0016]; thus, it is considered within Morita's disclosure that the source electrode has an area not less than 25% the size of the pixel electrode) for the purpose of increasing the current flow and to improve the luminance efficiency of the device, but silent about a conductive film for suppressing permeation of gas and moisture is formed outside of the display element unit, the conductive film covering the display element unit.

Garcia ('497) teaches (in at least fig. 2) a flexible organic electronic device with improved resistance to oxygen and moisture degradation, wherein a conductive film (22, 62; i.e. the barrier layers; see [0044]; note: the barrier layers are made of materials such as aluminum, copper, nickel, tin, inorganic oxides, indium etc...) for suppressing gas permeation and moisture is formed outside of the display unit wherein the conductive film covering the display element unit.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to contemplate of using the drain and source electrode structure of Morita into the device of Bao so as to cover the active layer on the source electrode substantially entirely in order to provide good protection to the active layer and

Art Unit: 2889

also to increase the current flow and to improve the luminance efficiency of the device, and to further modify the device of Bao with the barrier layers (i.e. the conductive film) of Carcia for the purpose of suppressing gas permeation and moisture in the device.

Regarding claim 5, Bao as modified by Morita and Carcia teaches (in at least fig. 2 of Carcia) the conductive (22 and 62) is formed so as to cover an entire surface of a display region.

Regarding claim 6, Bao ('668) teaches (in at least fig. 2) the substrate (205) suppresses gas permeation of oxygen and moisture.

Regarding claim 7, Bao ('668) teaches (in at least fig. 2) the substrate (205) is made of glass.

Regarding claim 8, Bao ('668) teaches (in at least fig. 2) the display unit (202) is an organic electroluminescence element.

Regarding claim 9, Bao ('668) teaches (in at least fig. 2) the active layer unit (230) of the thin film transistor unit (201) includes an organic semiconductor layer (col. 6, lines 50-65).

Regarding claim 10, Morita ('686) teaches (in at least fig. 1) the drain/pixel electrode (60) has an area larger than that of the source electrode (20) so as to cover an entire top surface of a channel of the active layer (30). The reason for combining is the same as for claim 1.

Response to Arguments

Applicant's arguments filed 06/13/2011 have been fully considered but they are not persuasive. The applicant argues (a), the combination of Bao, Morita and Carcia

Art Unit: 2889

does not teach or suggest the newly added limitation "the pixel electrode is overlapped in a thickness direction with the source electrode" in claim 1; (b), it is irrelevant whether Morita and Carcia teach the "the pixel electrode is overlapped in a thickness direction with the source electrode" in claim 1, as Bao would become inoperative if modified to require the above features of claim 1.

(a), The examiner respectfully disagrees. Morita discloses (in at least fig. 1) a pixel electrode (60) and a source electrode (20) wherein the pixel electrode is overlapped in a thickness direction with the source electrode. Therefore, the combination of Bao, Morita and Carcia does teach the newly added limitation of claim 1.

(b), The examiner respectfully disagrees because a mere rearrangement of parts of a device is obvious. At the time of the invention, it would be obvious to one of ordinary skill in the art to rearrange the parts of the device of Bao as modified by Morita and Carcia in a way such that the pixel electrode is overlapped in a thickness direction with the source electrode. Furthermore, forming devices with the pixel electrode is overlapped in a thickness direction with the source electrode is known in the art. For instance, Idechi et al., (US. Pub: 2004/0004215 A1) discloses a device wherein the pixel electrode is overlapped in a thickness direction with the source electrode.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELMITO BREVAL whose telephone number is (571)270-3099. The examiner can normally be reached on M-F (8:30 AM-5:00 Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karabi Guharay/
Primary Examiner, Art Unit 2889

July 20, 2011
/Elmito Breval/
Examiner, Art Unit 2889